BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of:

Amendment of the Commission's Rules to Establish New Personal Communications Services	))))	General Docket No. 90-314 ET Docket No. 92-100

To: The Commission

COMMENTS OF POWERSPECTRUM, INC.

PowerSpectrum, Inc. ("PSI") by its attorneys, hereby submits its Comments responsive to the Notice of Proposed Rule Making and Tentative Decision ("Notice") adopted by the Federal Communications Commission ("FCC" or "Commission") in the above-referenced matter which seeks information on how the FCC should structure the regulatory treatment of Personal Communications Services ("PCS").[1/]

I. INTRODUCTION

This Notice is the latest in a series of many Commission actions designed ultimately to authorize the use of PCS in the United States. The Commission initiated a Notice of Inquiry in this proceeding, issued a policy statement on PCS, held an en banc hearing on PCS and initiated a proceeding designed to make available spectrum in the 2 GHz band for a variety of emerging technologies, including PCS. The current Notice investigates a variety of possible spectrum allocation and licensing schemes.

1/ FCC 92-333, released August 14, 1992.

PSI is a subsidiary of Geotek Industries, Inc. ("Geotek"), a U.S. public company. Geotek focuses on various segments of the telecommunications industry. Through its subsidiary, Bogen Communications, a 60-year old communications company which Geotek acquired in 1991, the Company sells to a variety of participants in the industry, including AT&T, the Bell Operating Companies, and other major distributors in the U.S., Canada and Europe.

PSI is a corporation specifically created to exploit the development of frequency hopping multiple access ("FHMA") technology. In order to gain access to that technology, which was originally developed by RAFAEL, the Israeli Armament Research and Development agency, PSI has entered into a joint venture agreement with RAFAEL, Geotek, and Galram Technology Industries, Ltd., an Israeli government corporation. Under the terms of the joint venture agreement, an Israeli company, PowerSpectrum Technology, Ltd. ("PST") was formed to develop commercially the FHMA technology and to manufacture systems for PSI. Pursuant to the joint venture, PSI has obtained exclusive worldwide rights to commercial use of RAFAEL's advanced radio technologies.

PSI has applied for, and received authorizations, by assignment, for several 900 MHz specialized mobile radio ("SMR") systems throughout the country. Additionally, PSI submitted a rule waiver request to enable it to implement a multiple site, digital SMR system using 900 MHz channels with FHMA technology. PSI also believes that FHMA technology can be used successfully in the PCS service proposed by the Commission herein. PSI intends to foster the use of the FHMA technology in connection with this new service. Accordingly, PSI is pleased to have this opportunity to submit the following comments responsive to the Notice. PSI's comments do not address every issue raised in the Notice. Instead, it focuses upon those

matters which could affect its ability to manufacture equipment and/or offer service with FHMA-based technology.

II. COMMENTS

A. Number of Providers

The Commission tentatively concluded that its proposed allocation would support, at a minimum, three service providers per market and would insure a wide and rich range of PCS services that meet consumer needs at reasonable prices. Nevertheless, the Commission acknowledges the benefits of additional competitors and recognizes that innovation could result from the licensing of more PCS service providers. Therefore, it seeks comment on the merits of authorizing four or five PCS operators per market.

PSI agrees that the Commission should authorize as many licensees as possible, or at least five. PSI's recommended channelization scheme (discussed below) will permit the authorization of greater than three service providers. The increased number of providers will necessarily stimulate competition, reduce the price of service to the consumer and permit market and service segmentation. The public will be better served, if it is able to choose between a large number of competitors, each potentially offering different services, than by having a small number of competitors with more than sufficient spectrum capacity, offering similar services.

B. Size of Spectrum Blocks

The Commission proposes to allocate a minimum of 90 MHz in the bands 1850-1895/1930-1975 MHz, for licensed services. The Commission states that such an allocation would permit the authorization of three licensees with 30 MHz of spectrum each. The

Commission notes that if it decides to issue four or five PCS licenses per area or to assign blocks of 20 MHz or 40 MHz to each licensee, the overall spectrum allocation to PCS would be adjusted accordingly.

PSI recommends the adoption of a licensing scheme that would permit the use of between 10 and 20 MHz for each service provider. As noted above, the allocation of less spectrum per provider would encourage competition as well as promote the efficient use of the spectrum. Because PCS will be a commercial service, licensees will be encouraged to provide service to the greatest number of customers possible within their spectrum allocation. By increasing the amount of spectrum for which each entity is licensed, the Commission necessarily reduces the incentive for spectrum efficiency. Conversely, by reducing the amount of spectrum for each provider, and increasing the number of providers in a market area, the Commission will spur the use of spectrum efficient technologies.

There is no reason to allocate more than 10-15 MHz of spectrum for a service provider. Proponents of advanced digital technologies, including broad band spread spectrum techniques have long claimed they can perform efficiently with 10 MHz of bandwidth. PSI's FHMA technology, which is a form of spread spectrum transmission, will perform well with even less than 10 MHz of bandwidth. The dual results of a large spectrum allocation for each provider -- reduction in spectrum efficiency and reduction in competition -- should be avoided.

Current Commission policy is designed to promote the most efficient use of the spectrum. The issuance of authorizations covering greater than 10 MHz would be contrary to that direction. In the Docket No. 89-552 proceeding the Commission allocated spectrum in the

220 MHz band with channel bandwidths of 5 kHz.[2/] When it licensed SMR systems in the 900 MHz band, the Commission authorized the use of channel bandwidths of 12.5 kHz, rather than the 25 kHz allowed at 800 MHz. These decisions all encourage the provision of service with the minimum bandwidth possible. If the Commission, in this proceeding, allows licensees to employ 30 or 40 MHz, even those using inefficient techniques will have the capacity to carry many subscribers, therefore eliminating any incentive to employ spectrum efficient technologies.

C. Service Area Definition

The Commission notes two competing factors in its analysis of the correct size for a PCS licensees' service area. On the one hand, the Commission states that consolidation has occurred in the cellular communications industry, resulting in firms which serve substantial portions of the U.S. population. However, the Commission also recognizes that smaller service areas may permit broader participation by firms of all sizes in the PCS market. As a result, the Commission proposes four options for licensing PCS.

PSI agrees with the Commission's analysis that each option proposed has merits. Accordingly, and based upon the size of the allocation recommended by PSI, the Commission should issue licenses to operators serving metropolitan or rural statistical areas (MSAs/RSAs), broader geographic regions, as well as the entire country. The Commission has traditionally issued authorizations in the cellular service on an MSA/RSA basis. Extensive market research by PSI and others shows that business activities conducted by typical mobile communications customers occur within an MSA sized area. At a minimum, therefore, service should be

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2/ 6 FCC Record 2256 (1991).

authorized on an MSA basis.

However, PSI also believes that economies of scale, as well as market segmentation, can occur if there is both regional and nationwide service. Regions could be broadly defined, so that the country would consist of only four or five areas. However, PSI does not object to a definition of region which employs the 47 "Major Trading Areas" defined in the Rand McNally Commercial Atlas and Marketing Guide, as proposed by the Commission. Finally, PSI recommends that the Commission designate some spectrum for nationwide operations. While the majority of customers will require service on an MSA or RSA basis, there will be markets for regional and national accounts. Accordingly, the Commission should allocate the spectrum in a fashion which encourages this mix of service.

D. Licensing Mechanism

The notice addresses three potential methods by which authorizations could be issued for PCS service: (1) comparative hearings; (2) lotteries; and (3) competitive bidding. Regardless of the method employed, the Commission should ensure that authorizations are issued to, among others, entrepreneurial entities without deep pockets. PSI, through its development of FHMA technology, is positioned to have a significant positive impact upon the development and provision of PCS. However, were the Commission to employ competitive bidding, PSI could not secure an authorization if the other participants were substantial companies with more significant resources. Such a result would not be in the public interest, because PSI, a developer of FHMA technology, would be foreclosed from securing an authorization, in favor of an entity without a definable potential contribution to the industry. Accordingly, if competitive bidding was employed, the Commission should award a preference for an entrepreneurial entity

like PSI which could not bring as many resources, but instead relevant experience and technological expertise and development to the authorization.

PSI is not necessarily in favor, however, of a lottery which would include all interested applicants. The number of entities attracted by a lottery far exceeds those who are actually capable of constructing the facilities and providing the service. Accordingly, if a lottery approach is chosen, PSI urges the Commission to require demonstration of financial, technical and other eligibility requirements. Even employing a lottery, however, the Commission should permit the establishment of a preference for entrepreneurial entities with relevant experience and technological capabilities.

E. Regulatory Status

The Commission seeks comment on whether PCS should be classified as a common carrier or private land mobile radio service. PSI strongly believes that the Commission should regulate PCS as a private carrier. PSI sees no benefit to the regulation of this service as a common carrier. Competitive pressures will ensure that the public is provided with the best service possible. PSI is cognizant that the Communications Act provides that the test for private land mobile service is that a licensee not resell interconnected telephone service for profit.[3/] PSI anticipates that the primary service that PCS providers will sell to the public is the access to various communications networks, including the local telephone network. Over time, PSI envisions that many PCS customers will be able to make calls to other PCS customers, without using the local landline system. However, even initially, when most calls will

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3/ See, generally, Notice at n. 69.

be placed through the telephone system, it will be access that the PCS provider will offer to customers. While the PCS licensee will provide interconnected telephone service, the value, from which profits are derived, is the ability to interconnect, not the resale of the interconnected service itself. This distinction has long been the basis for the regulation of SMR providers as private carriers and should be adequate for regulating PCS providers as private carriers as well.

F. Interconnection

The Commission specifically proposes to confirm that PCS licensees have a federally protected right to interconnect with the public switched telephone network ("PSTN"). PSI strongly agrees that this federal right is important to PCS providers. PCS licensees will provide access to both long distance and local networks. It is, therefore, critical that the right to interconnection be federally protected. PSI also agrees with the Commission's tentative conclusion that PCS providers should be entitled to a type of interconnection that is no less favorable than that offered by the LEC to any other customer or carrier. It also concurs with the Commission that separate interconnection arrangements for intrastate and interstate services will not be feasible. Accordingly, it supports the Commission's conclusion that state and local regulation of the type of interconnection to which PCS providers are entitled should be preempted.

G. Technical Standards

The Commission noted in October, 1991 as part of the PCS Policy Statement and Order, that it would establish a PCS advisory committee to help resolve such technical issues as transmission standards, interference control, inter and intra-industry protocols and roaming.

PSI strongly disagrees with any FCC effort, apart from interference control, to establish technical standards for the new PCS industry. The Commission must leave room for new technologies to emerge. Because the definition of the service is not clear and may actually be quite broad, any standardization (other than by market forces) would stall the introduction of services and technologies. Also, different services such as voice, data and others yet to be defined, may require different protocols and interfaces. It would be impractical to standardize these various transmission techniques. Any decisions of this nature should be made by market forces, and not the Commission.

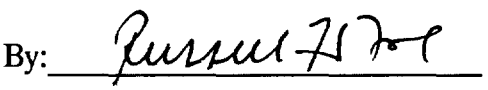
III. CONCLUSIONS

The provision of PCS service offers the Commission the unique opportunity to increase the number of mobile communication service providers and the type of technology offered by these entities. Accordingly, the Commission should authorize as many licensees as possible. In order to do so, it should permit each licensee to access no more than 10-20 MHz of spectrum. In licensing PCS providers, the Commission should authorize local (defined on a MSA or RSA basis), regional and national licenses. Authorizations could be awarded either by lottery or by competitive bidding. However, in either case, the Commission should ensure that entrepreneurial entities, with proven telecommunications capability or technological development, be provided a preference to secure an authorization. The new PCS service should be regulated on a private carrier basis, with equal access to both local and long distance telephone networks. Finally, PSI believes the Commission must not set technology standards. It should be up to the marketplace to decide upon the most attractive technology possible.

WHEREFORE, THE PREMISES CONSIDERED, PowerSpectrum, Inc. submits the foregoing Comments and urges the Commission to act in a manner consistent with the views expressed therein.

Respectfully submitted,

PowerSpectrum, Inc.

By: 

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